The Official Action rejects claims 1-32 under 35 U.S.C. §102(b) as being anticipated by Rostoker et al. (US 5,594,626); and rejects claims 13-29 under 35 U.S.C. §103(a) as being unpatentable over Rostoker et al. in view of previously applied Kaneko et al. (US 5,534,786).

Applicants note with appreciation the indication that claims 6-12 are drawn to allowable subject matter, and are objected to as depending from a rejected base claim. These claims are indicated as being allowable if rewritten in independent form.

The Non-Final Official Action is Procedurally Deficient

Applicants submit that the Official Action is deficient procedurally for the following reasons:

A. Both anticipation (§102(b)) and unpatentability (§103(a)) rejections have been asserted against claims 13-29. Clearly, this not only confuses the issues, but maintaining both rejections is submitted as being untenable and contrary to the MPEP. Clarification is requested.

B. The basis for the unpatentability rejection of claims 19 and 20 is not provided in the Official Action, as required by the MPEP. There is no discussion of these claims, other than the cursory statement of the rejection that "[c]laims 13-29 are rejected under 35 USC 103(a) as being unpatentable over...". Further justification of the rejections of these claims is requested.

In the event that a Notice of Allowance is not forthcoming in response to this communication, Applicants submit that the next Official Action could, properly, only be non-final under established MPEP procedure, in consideration of the deficiencies noted above.

Acknowledgement of Formal Drawings is Requested

Applicant notes that Formal Drawings were filed concurrent with the filing of the previous Response on June 28, 2002. However, acknowledgement and approval of the Formal Drawings was not provided in the current Official Action. Acknowledgement and approval of the formal drawings is requested.

Anticipation Rejection

Withdrawal of the rejection of claims 1-32 under 35 U.S.C. §102(b) as being anticipated by Rostoker (US 5,594,626) is requested.

Applicants note that anticipation requires the disclosure, in a prior art reference, of each and every limitation as set forth in the claims.[1] There must be no difference between the claimed invention and reference disclosure for an anticipation rejection under 35 U.S.C. §102.[2] To properly anticipate a claim, the reference must teach every element of the claim.[3] "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference".[4] "The identical invention must be shown in as complete detail as is contained in the ...claim."[5] In determining anticipation, no claim limitation may be ignored.[6] At least with respect to independent claims 1, 30, and 32, the applied art does not meet the requirements for anticipation set forth above, as discussed below.

By way of background, the present application, in a preferred embodiment, is directed to a carrier for test, burn-in, and first-level packaging of semiconductor devices. The disclosed and claimed invention provides, in one aspect of the invention, a method for manufacturing and testing semiconductor components that ***combines testing, burning-in and end-use packaging***. In another aspect of the invention, a semiconductor structure comprising a device carrier is provided, wherein ***the carrier used for burn-in testing is also used in the end-use application, without removing the device from the carrier***.

The components or semiconductor devices attached to the carrier are tested via interconnect wiring in the carrier. ***The wiring in the carrier is also sufficient for end-use operation of attached semiconductor devices***. The carrier is divided into a plurality of components such that each component contains at least one semiconductor device, for example. Those components, including the carrier, are used as the first packaging level of assembly.

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[1] *Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985).
[2] *Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 USPQ2d 1001 (Fed. Cir. 1991).
[3] *See* MPEP § 2131.
[4] *Verdegaal Bros. v. Union Oil Co. of Calif.*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).
[5] *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).
[6] *Pac-Tex, Inc. v. Amerace Corp.*, 14 USPQ2d 187 (Fed. Cir. 1990).

By the method and structure of the claimed invention, the substantial costs and time associated with initially aligning and attaching chips to the substrate to conduct burn-in, and then removing the chips, separately testing the chip characteristics in a tester, and then reattaching the chips to a final substrate once burn-in and device characterization are completed are avoided by using the burn-in test carrier as part of the end-use package.

In contrast, Rostoker et al. is directed to a partially-molded, PCB chip carrier package for various non-square die shapes to more efficiently allow interconnection, and is silent on testing chip characteristics in a tester after burn-in, and is particularly silent on using a burn-in test carrier as part of the non-square end-use package.

In particular, Rostoker et al. does not disclose a method for manufacturing and testing semiconductor components which includes, among other features, "...providing a device carrier...having interconnect wiring...sufficient for both testing and end use operation of said semiconductor device", as recited in independent claim 1.

Further, Rostoker et al. does not disclose a semiconductor structure which includes, among other features, "a device carrier...having interconnect wiring...sufficient for both testing and end use operation of said semiconductor devices...without separating said devices form said carrier", as recited in independent claim 30.

Finally, Rostoker et al. does not disclose, as depicted in one embodiment shown in Figs. 13a and 13b, a semiconductor structure which includes, among other features, "a stack of flex device carriers...and an interconnect substrate, wherein said flex device carriers are electrically connected to said interconnect substrate", as recited in independent claim 32.

Therefore, as the applied art does not disclose all the recited claim limitations, withdrawal of the anticipation rejection and allowance of independent claims 1, 30, and 32 are requested.

Further as dependent claims 2-29 and 31 variously and ultimately depend from independent claims 1 and 30, respectively, these claims are submitted as being allowable at least

on that basis, without further recourse to the patentable features recited therein. Allowance of dependent claims 2-29 and 31 are also requested.

Obviousness Rejection

Withdrawal of the rejection of claims 13-29 under 35 U.S.C. §103(a) as being unpatentable over Rostoker et al. in view of Kaneko et al. (US 5,534,786) is requested.

In summary, Kaneko et al. teaches away from at least one aspect of the invention claimed in independent claim 1 and is submitted, therefore, as not being properly combinable with Rostoker et al.

Kaneko et al. does not make up for the deficiencies of Rostoker et al. and, even if properly combinable in the manner suggested by the Examiner, the applied art does not teach or suggest all the claimed features of independent claim 1, from which dependent claims 13-29 depend.

The procedural deficiencies of the dual anticipation/unpatentability rejections of claims 13-29, and the lack of specificity in the rejection of dependent claims 19-20 were discussed above.

At the outset, Applicant notes that, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, ***the prior art reference must teach or suggest all the claim limitations*** (emphasis added).[7] Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.[8]

Rostoker et al. is discussed, *supra*, with respect to the anticipation rejection of claims 1-32.

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[7] *See* MPEP §2143.

[8] *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) and *See* MPEP §2143.

In further contrast, Kaneko et al. is discloses a burn-in and test method of semiconductor wafers and burn-in boards for use in semiconductor burn-in tests which divides each semiconductor wafer into blocks each including some integrated circuits, and which assigns each block an address to indicate in which part of the semiconductor wafer the integrated circuits of the block are placed. These addresses are recorded, and detachable carriers also having an identification code are loaded with a block to be tested. As discussed in Kaneko et al. (see col. 5, lines 7-13 when all the burn-in is finished, all carriers are removed from the burn-in board, and then, these carriers are fitted in the IC sockets of an IC tester for testing their characteristics. By handling and loading plural dies in block units, electrical connections to the burn-in and test apparatus are not as complicated, and the procedure is not a laborious as with so-called "die-by-die" loading.

Analysis of burn-in test results permits the locating of defective integrated circuits in semiconductor wafers using the recorded addresses of the blocks, and the identification codes of the carriers. ***Once "good" chips are identified, they are removed from the carrier, and subsequently reattached to an operational carrier.***

That is, Kaneko et al. clearly teaches away from one aspect of the invention, by teaching that, after "good" chips are identified, they are removed from the carrier used in the burn-in test, and subsequently fitted into the IC sockets of an IC characteristics tester. Applicant presumes that subsequent removal from the IC tester and attachment to an end-use carrier follows a successful test of the IC characteristics.

Kaneko et al., therefore, represents a conventional, expensive and time-consuming temporary chip attachment, which is specifically disfavored by the approach of the present application, and which ***teaches away*** from at least one aspect of the invention claimed in independent claim 1.

Applicants point out that it is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests

to one skilled in the art.[9] Further in this regard, As the Court of Customs and Patent Appeals, predecessor to the Federal Circuit, has held:

> All relevant teachings of cited references must be considered in determining what they fairly teach to one having ordinary skill in the art. The relevant portions of a reference include not only those teachings which would suggest particular aspects of an invention to one having ordinary skill in the art, but also those teachings which would lead such a person away from the claimed invention.[10]

Even assuming that the references are properly combinable as suggested by the Examiner, a proposition with which Applicants specifically do not agree, Kaneko et al. does not make up for the previously identified deficiencies of Rostoker et al. with respect to independent claim 1.

Accordingly, since the applied art, either alone or in combination, does not disclose all the features of the recited invention, withdrawal of the unpatentability rejection and allowance of dependent claims 13-29 are requested.

Allowable Subject Matter

Applicants note with appreciation the indication that claims 6-12 are allowable, and would be allowed if rewritten in independent form. However, due to the deficiencies of the art rejections, and the procedural deficiencies identified above, amendment of these claims into independent form is not believed to be necessary for passing the application to issue.

Conclusion

In view of the above, each of claims 1-32 are believed to be in immediate condition for allowance; an early recognition of the same is respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

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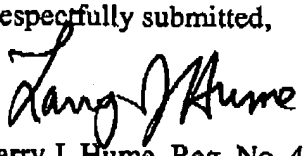
[9] *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 USPQ 416 (Fed. Cir. 1986).
[10] *In re Mercier*, 185 USPQ 774, 778 (CCPA 1975).

Although extensions of time or other fees are not believed to be necessary with this communication, the Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185.

Respectfully submitted,



Larry J. Hume, Reg. No. 44,163
Customer Number 30678
Connolly Bove Lodge & Hutz LLP
1990 M Street, N.W., Suite 800
Washington, D.C. 20036-3425
Telephone: 202-331-7111

LJH/CMF